Ann. Natal Mus. Vol. 24(1) Pages 193–200 Pietermaritzburg November, 1980

Taxonomic studies on the Marine Mollusca of southern Africa and Mozambique. Part 2

by

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SYNOPSIS

The following new species are described: *Calyptraea* (? *Desmaulus*) *barnardi* (Calyptraeidae); *Trivia* (*Triviella*) *calvariola* (Triviidae); *Phalium* (*Casmaria*) *decipiens* (Cassidae); *Fusivoluta wesselsi*, *Volutocorbis magister* (Volutidae).

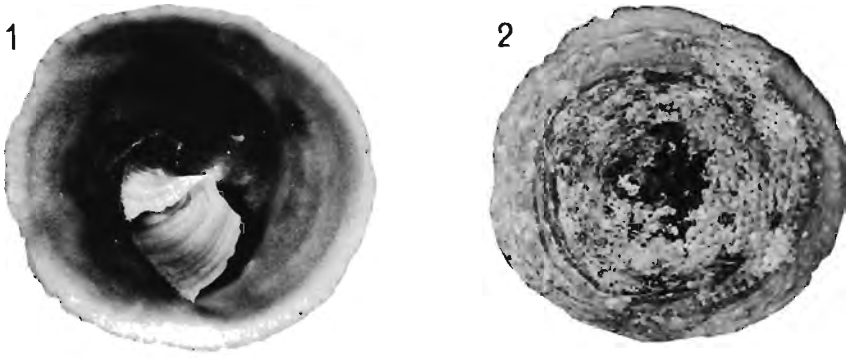
Family Calyptraeidae

Calyptraea (? Desmaulus) barnardi sp. n. (Figs 1–2)

Calyptraea aurita (*non* Reeve, 1859); Barnard, 1963: 75, figs 10 a (base), b, c (protoconch), 11d (radula); Carrington & Kensley, 1969: fig. 2d (base); Kensley, 1973: 93, fig. 313.

Diagnosis: More or less oval, not distinctly spiral, protoconch keeled, with spiral threads, adult with concentric rows of fine prickly scales; septum a rounded lobe flanked by a deep sinus, columella folded to form a narrow, deep, false umbilicus; yellowish- or reddish-brown. Maximum diameter 24 mm.

Description: Shell oval to slightly ovate in outline, generally depressed (length/height 0,32–0,44), rarely somewhat elevated (length/height 0,57), apex slightly eccentric, sutures not visible; protoconch tilted, keeled, with fine spiral threads. Septum forming a well-rounded lobe with a deep sinus at its junction with outer margin; columella folded over to form a deep, constricted, false umbilicus. Sculpture of concentric rows of small, close, vaulted, prickly scales; margin not distinctly crenulate. Colour yellowish- or reddish-brown, exterior dull.



Figs 1–2. *Calyptraea barnardi* sp.n. holotype, 20,1 × 18,4 mm. 1. Ventral view. 2. Dorsal view.

Dimensions: 20,1 × 18,4 mm, height 6,4 mm (holotype); 24,0 × 21,5 mm, height 13,7 mm, 18,8 × 17,3 mm, height 8,0 mm (paratypes).

Distribution: From off Cape Agulhas to the Natal south coast, in 11–229 metres.

Type material: Holotype, N.M. 892/T2291, off Cape St Blaize area, ex pisce, leg. R. Le Maître. Paratypes 1–6, N.M. 890/T2289, same data; paratype 7, N.M. 6041/T2287, Jeffreys Bay littoral, leg. R.K.; paratype 8, N.M. A3821/T2288, Port Shepstone littoral, leg. R. Cock.

Remarks: This species has been recorded as the Chilean *Calyptraea aurita* (Reeve, 1859). Four syntypes of the latter species (described as a *Crucibulum*) have been examined in the collection of the British Museum (Natural History), as No. 197798. In these the apex is markedly more eccentric and the sculpture consists of wavy, granular radial ribs, instead of concentric rings of fine scales as in the South African taxon. The latter is consequently regarded as a distinct species, here named in honour of the late Dr K. H. Barnard, who described its characters so well. Curiously enough, Carrington & Kensley (1969) described a chronosubspecies of *Calyptraea* '*aurita*' from the Pleistocene of Namaqualand, using the name *striata*. This material actually bears fine radial ribs, suggestive of the true *aurita* and possibly indicating the origin of *C. barnardi* to be from *aurita* stock. Unfortunately the combination *Calyptraea striata* is thrice preoccupied (Gray, 1825; Say, 1826; Broderip, 1834).

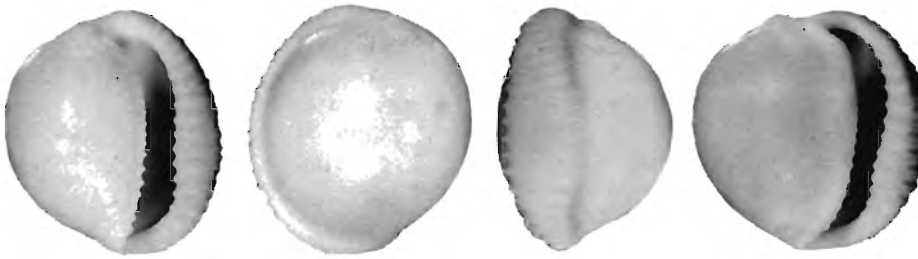
The generic position of *C. barnardi* needs confirmation, as the distinctive protoconch (cf. Barnard, 1963, figs 10 b, c) is atypical for *Calyptraea*. The protoconch of *Calyptraea extinctorium* Lamarck, 1822, type species of *Desmaulus* Rehder, 1943, has evidently not been described, but an Andaman Island example (N.M. F8891: Mrs & Miss E. M. Man) appears to have a keeled, tilted protoconch similar to that of *barnardi*, although its worn state precludes certainty. The columella septum is not as tubular in *barnardi* as in *extinctorium*, and is in fact fairly typical in form for *Calyptraea* ss.

Family Triviidae

Trivia (Triviella) calvariola sp. n. (Figs 3–6)

Diagnosis: Shell very globular, ventral side strongly rounded, extremities very short, labrum very wide and declivous, crossed as far as dorsal margin by strong transverse ridges; labium with a row of small teeth, and a few ridges at each end in adults; dorsum completely smooth; pure white. Maximum length 19,4 mm.

Description: Shell globose, dorsum very convex, ventral side strongly rounded, greatest breadth at midline, extremities truncated, but not notched; aperture moderately wide, medially slightly constricted, widest basally; left side of base fairly calloused but not marginate; labrum very broad (particularly medially) and strongly declivous, with an angular margin, crossed by 14–21 transverse ribs, 12–17 of which reach the peristome, where they form a series of denticles; intervals between ribs with axial rows of microscopic pustules; labium evenly convex, with an angular edge which bears 18–20 small denticles, fossula wide and



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Figs 3–6. *Trivia calvariola* sp. n. 3–5. Holotype, 19,4 × 17,0 mm. 6. Paratype, 18,8 × 18,4 mm.

concave, with a strong inner ridge which usually bears 5–7 weak denticles. Pure white.

About 2 teleoconch whorls; protoconch largely masked by callus, but evidently about 2.5 mm in diameter, with a rather cap-like nuclear whorl.

Dimensions: 19,4 × 17,0 mm, dorsiventral height 14,3 mm (holotype); 18,8 × 18,4 mm, height 15,0 mm, 16,3 × 15,1 mm, height 12,7 mm (paratypes).

Distribution: Known only from off Algoa Bay, depth unknown.

Type material: N.M. 888/T2284, off Algoa Bay, ex pisce, don. Mr R. Le Maître. Paratype 1, N.M. 887/T2283, and paratype 2 in coll. Le Maître, same data.

Remarks: This intriguing new species shows a remarkable if superficial resemblance to *Cypraea cruickshanki* Kilburn, 1972, from off Durban. However, the latter has slightly rostrate ends and its labral teeth do not cross to the edge of the dorsal margin as in *T. calvariola*. Moreover *T. calvariola* is smaller and always white, and its slightly raised spire and *Triviella*-like aperture suggest triviid rather than cypraeid affinities. Its closest relatives appear to be *Trivia* (*Triviella*) *splendidissima* (Tomlin & Schilder, 1934) and *T.* (*T.*) *sanctispiritus* Shikama, 1974; these are similar in shape, but have transverse ridges which completely traverse the dorsum and left side of the base. The only other *Triviella* with a smooth dorsum is *T. ovulata* (Lamarck, 1810) which, *inter alia*, is far less globular, with a much narrower labrum.

Family Cassidae

Phalium (Casmaria) decipiens sp. n. (Figs 7–8)

Diagnosis: Shell oblong-ovate, breadth/length 0,61–0,65, spire rather straight-sided, whorls not distinctly shouldered nor nodulous, without any trace of spiral sculpture, but with feeble axial riblets below the suture; parietal callus thin or absent, columella with 3–9 fine pleats, labrum with blunt teeth, at least posteriorly, false umbilicus closed. Brownish-orange to light yellowish-brown with 5–8 narrow white spiral bands bearing small brown spots. Maximum length 31 mm.

Description: Shell oblong-ovate, breadth/length ratio 0,61–0,65, thick, glossy, spire flat-sided and blunt, apical angle 75°–95°, aperture 0,70–0,77 of total length;

whorls abutting and slightly adpressed a short distance below the suture, but not distinctly shouldered. Aperture acutely tapering posteriorly where it is constricted by a labral swelling; labrum thick, gently curved posteriorly, with a feeble shoulder, strongly curved anteriorly where it projects well beyond base of columella; interior of labrum with a series of low, blunt denticles, sometimes restricted to the posterior swelling. Labium gently convex in parietal region, slightly concave or almost straight below; columella with a thick callus deposit, its interior with a well-developed terminal ridge, preceded by 3–9 fine, oblique folds; parietal callus absent or a mere glaze, thickened only at junction with labrum. False umbilicus closed, siphonal fasciole circumscribed above by a deep furrow. Surface smooth save for growth lines and very fine, weak axial plicules below the suture; no spiral sculpture at any stage.

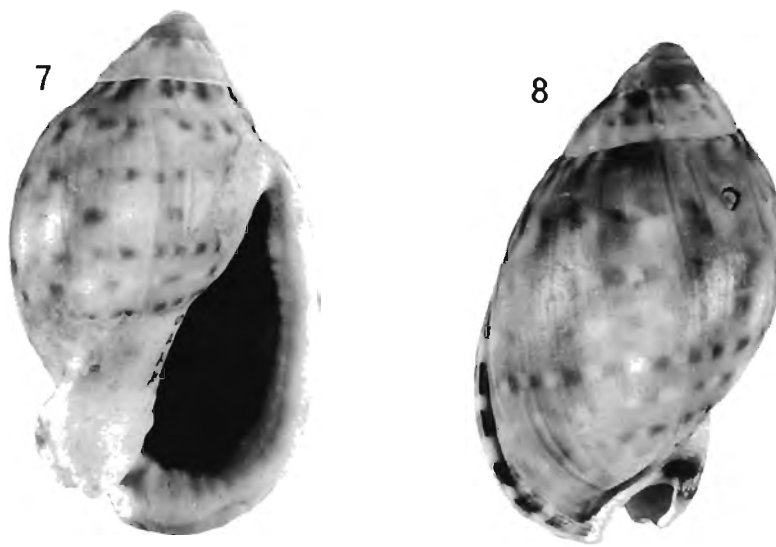
Ground colour brownish-orange to medium orange-yellow or light greyish-brown, with a series of small brownish-orange blotches below the suture and 5–8 narrow white bands of brownish-orange spots; aperture medium-brown to brownish-orange, edge of labrum crossed by nine indistinct, brownish bands, terminating in a series of dark brown squares on its trailing edge; fasciole with a large dark brown blotch at dorsal termination of siphonal canal (ISCC-NBS terminology).

Protoconch worn; teleoconch of about four whorls.

Dimensions: 49,2 × 29,8 mm (holotype); 33,5 × 21,7 mm; 30,0 × 18,8 mm (paratypes).

Distribution: East London area to Natal north coast (29°17'S).

Type material: Holotype, N.M. 5422/T2292, Melville, Natal south coast (29°17'S, 26°41'E), leg. R.K. Paratypes 1, 2, N.M. 815/T2295, Umvoti, Natal north coast, leg. H. C. Burnup; paratype 3, N.M. 5415/T2294, Shelley Beach, Natal south



Figs 7–8. *Phalium decipiens* sp.n. holotype, 49,2 × 29,8 mm. 7. Ventral view. 8. Dorsal view.

coast, leg. W. G. Rump; paratype 4, N.M. 5430/T2293, Tongaat, Natal north coast, leg. H. C. Burnup; paratypes 5, 6, Umdloti Beach, Natal north coast, in coll. Mrs P. Palmer; paratype 7, Bonza Bay, East London, in coll. Mrs M. Quickelberge.

Remarks: This rare species occurs occasionally in beach drift, usually in damaged state; it has not yet been taken alive. Hitherto it appears to have been confused with the common rocky-coast ecomorph (*iredalei*) of *Phalium labiatum zeylanicum* (Lamarck, 1822), which is very similar in general appearance. *P. decipiens* differs from *iredalei* in its narrower proportions (breadth/length 0,61–0,64, against 0,65–0,76) and its higher and more orthoconic spire (angle 75°–95° against 90°–105°), whose early part is not coeloconic as in *iredalei*, and whose whorls totally lack spiral sculpture, with no indication of the fine spiral threads always present on the early teleoconch whorls of *iredalei*. Growth lines are strong enough to form feeble subsutural riblets, not found in *iredalei*, the columella is markedly less calloused than in the latter, the outer lip is denticulate and is straighter and projects more basally; the false umbilicus is always occluded, whereas it is normally open in *iredalei*. Colour pattern separates them at a glance, *decipiens* being marked with brownish-orange rather than medium to deep brown, the pattern consisting of narrow, widely-spaced, but well-defined, pale bands with small brown squares or spots, rather than broad, diffuse rows of contiguous brown and white crescents as in *iredalei*. The presence of columella folds would separate *P. decipiens* from Cape examples of *iredalei*, but not from Natal shells in which distinct folds may develop.

P. decipiens differs from other members of the subgenus *Casmaria* H. & A. Adams, 1853 (regarded as a full genus by most workers) in lacking prickles on the edge or base of the labrum, and in having the posterior end of the aperture strongly constricted by a swelling of the labrum.

Family Volutidae

Fusivoluta wesselsi sp. n. (Fig. 12)

Diagnosis: Small (25 mm), fusiform, with a short siphonal canal, evenly convex whorls and rather flaring aperture; axial ribs narrow, close, very sinuous, numbering about 15–20 on last whorl, crossed by fine dense spiral threads; columella smooth; protoconch large and blunt, first whorl tilted and smooth, second whorl with spiral striae and peripheral riblets.

Description: Fusiform, with a short, rapidly tapering, slightly bent siphonal canal, spire longer than aperture; whorls evenly curved with deep sutures, save for the first teleoconch whorl which is somewhat shouldered; aperture relatively large, labrum flaring, sinuous in side view; labium evenly curved, with a thin, but well-defined callus, columella smooth, paries with a very weak nodule. Axial ribs strong, opisthocline and very sinuous, subequal to the intervals, angular in cross-section, 12–14 in number on first teleoconch whorl, increasing to 15–20 on last whorl; crossed by fine, close spiral threads, about 22–30 on penultimate

whorl, sometimes obsolete above suture and around middle of body whorl, but extending on to base. Colour pale buff.

Protoconch large and blunt, of about two whorls, the first smooth and tilted, the second with about 17–22 small, fold-like nodules at its periphery, which is consequently rendered somewhat angulate, the last few nodules developing into fine riblets; faint spiral striae are also present on 2nd whorl; maximum diameter 2,2 mm.

Dimensions: 25,4 × 9,3 mm (holotype); 20,9 × 8,1 mm (paratype).

Type material: Holotype N.M. 889/T2285, Tugela Bank, 50 metres on mud and stone, don. Dr H. Wessels. Paratype 1, N.M. H6014/T2286, trawled on Mozambique prawn grounds, don. Dr H. Wessels; paratypes 2–3 in coll. Wessels. Paratype 4, 'Dar es Salaam area', in coll. B. J. Young.

Distribution: Tugela Bank (Zululand), north into Mozambique. The Dar es Salaam (Tanzania) locality (paratype 4) seems doubtful in view of the lack of refuelling facilities for South African vessels in Mozambique and Tanzania, which would greatly restrict the range of local trawlers.

Remarks: F. wesselsi is one of the smallest of the genus, and cannot be confused with any others. The only comparable species is the East African *F. anomala* (von Martens, 1902) which is much larger, with a markedly longer siphonal canal and fewer, more widely-spaced axial ribs, while its whorls are not evenly convex as in *wesselsi*.

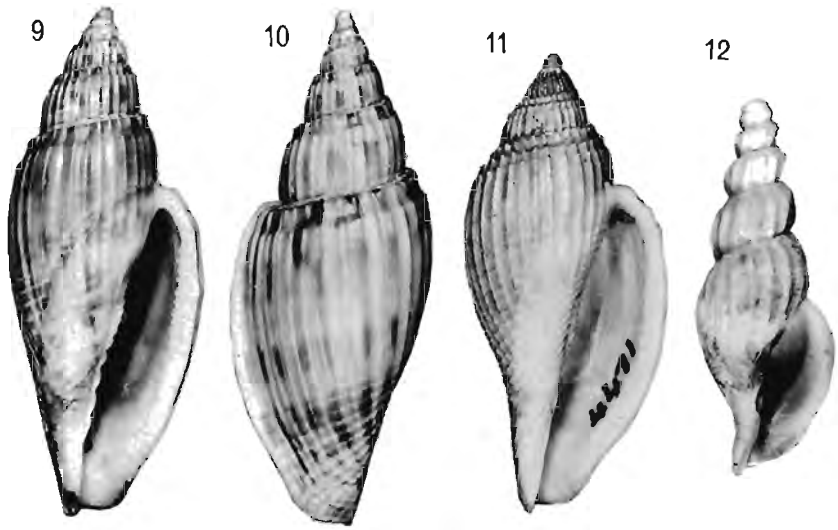
Volutocorbis magister sp. n. (Figs 9–10, 13)

Diagnosis: Surface glossy, sutures stepped but not distinctly channelled, axial ribs straight, weaker on body whorl than on spire, bearing two rows of small spinous nodules separated by a shallow furrow below suture, spiral grooves only on base of body whorl; mottled with brown. Maximum length 72,7 mm.

Description: Oblong-fusiform, spire sharply conical, whorls moderately rounded, narrowly stepped but not channelled at suture; aperture narrowly lanceolate, greatest width just anterior to middle; labrum gently curved, thickened, with short pleats along its inner margin; parietal callus extensive, thin, translucent, not masking underlying sculpture and pattern; columella with 11–12 thin, sharp, obliquely transverse folds, the anterior five or six being the strongest and most widely spaced. Sculpture of almost straight, angulate, slightly opisthocline, axial ribs, 17–21 on first teleoconch whorl, increasing to 24–30 on penultimate whorl, becoming progressively weaker with age, and finer and more irregular towards the end of the body whorl; from first whorl onwards a shallow concavity traverses the ribs, which forms a small spinous nodule on each side; spiral sculpture absent, except on the base, where there are 10–14 rough grooves, whose intervals become ridge-like on the rostrum.

Surface glossy; ground colour light yellowish-brown with spiral rows of diffuse light brown to (pale) brownish-orange blotches, rarely forming faint spiral bands (ISCC-NBS terminology).

Protoconch mamillate, slightly over 2 strongly convex whorls, apical whorl depressed; maximum diameter 2,3–2,8 mm.



Figs 9–12. Volutidae. 9–11. *Volutocorbis* species. 9–10. *V. magister* sp.n. 9. Holotype, 66,4 × 26,1 mm. 10. Paratype, 69,2 × 27,9 mm. 11. *V. boswellae* Rehder, 1969, NM 4471, 100 miles off Cape Agulhas, 70–80 fathoms, 44,7 × 20,0 mm. 12. *Fusivoluta wesselsi* sp.n. holotype, 25,4 × 9,3 mm.

Dimensions: 66,4 × 26,1 mm (holotype); 65,9 × 26,2 mm; 73,8 × 30,1 mm (paratypes).

Distribution: Continental slope between Cape Agulhas and Cape St Blaize.

Type material: Holotype N.M. B891/T2290. Paratypes 1–4 in coll. R. Le Maître; 5–6 in coll. A. Jenner.

Remarks: Volutocorbis magister has been confused with *V. boswellae* Rehder, 1969 (Fig. 11), which it very closely resembles. Dr Harold Rehder (in litt. to A. Jenner) has, however, commented on the distinctiveness of the present material. *V. magister* has only two rows of spinous nodules below the suture, while *boswellae* always has a weak third at least on the spire; in *magister* the protoconch is also larger (maximum diameter 2,3–2,8 mm as against 2,0–2,2 mm

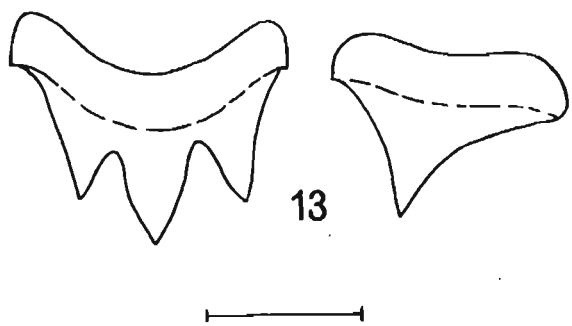


Fig. 13. Radula of *Volutocorbis magister* sp.n. Scale = 0,1 mm.

in *boswellae*), the spire higher (ratio of length of aperture/total length 0,62–0,67 against 0,67–0,68), breadth is relatively less (breadth/total length 0,39–0,42 against 0,42–0,53), the labrum is less curved and the spiral grooves are more restricted.

The specific name is a latinisation of that of the discoverer, Mr R. Le Maître.

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Date received: 1 August 1979.